

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Michael A. Pate et al.

Confirmation No.:

Application No.:

Examiner:

Filing Date: July 31, 2003

Group Art Unit:

Title: DISPLAY DEVICE INCLUDING A SPATIAL LIGHT
MODULATOR WITH PLURAL IMAGE REGIONS

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of national application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97(c) together with either a:
☐ Statement under 37 CFR 1.97(e), or
☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97 (d) together with a:
☐ Statement under 37 CFR 1.97(e)(1) or (2), and
☐ a \$180.00 fee set forth in 37 CFR 1.17(p).
(Filed after final action, a notice of allowance, on or before payment of the issue fee)

Please charge to Deposit Account **08-2025** the sum of \$0.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **08-2025** pursuant to 37 CFR 1.25.

☒ Applicant(s) submit herewith Form PTO 1449 - Information Disclosure Citation together with copies, of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

☒ A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individuals(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

It is requested that the information disclosed herein be made of record in this application.

"Express Mail" label no. EV 315138508 US

Date of Deposit July 31, 2003

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, Washington, D.C. 20231.

By Christie A. Doolittle

Typed Name: Christie A. Doolittle

Respectfully submitted,

Michael A. Pate et al.

By Walter W. Karnstein

Walter W. Karnstein

Attorney/Agent for Applicant(s)

Reg. No. 35,565

Date: July 31, 2003

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| FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) | ATTY. DOCKET NO. | APPLICATION NO. | CONFIRMATION NO. |
| | 200209409-1 | | |
| | APPLICANT Micha I A. Pate et al. | | |
| | FILING DATE | GROUP | |
| | July 31, 2003 | | |

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | PUBLICATION DATE | NAME | Pages, Columns, Lines Where Relevant Passages or Figures Appear |
|------------------|----|-----------------|------------------|--------------------|---|
| | 1A | 4,662,746 | 05/05/1987 | Hornbeck | |
| | 1B | 4,850,685 | 07/25/1989 | Kamakura et al. | |
| | 1C | 4,956,619 | 09/11/1990 | Hornbeck | |
| | 1D | 4,983,032 | 01/08/1991 | Van Den Brandt | |
| | 1E | 5,061,049 | 10/29/1991 | Hornbeck | |
| | 1F | 5,083,857 | 01/28/1992 | Hornbeck | |
| | 1G | 5,105,265 | 04/14/1992 | Sato et al. | |
| | 1H | 5,157,523 | 10/20/1992 | Yamagishi et al. | |
| | 1I | 5,264,879 | 11/23/1993 | Shikama | |
| | 1J | 5,410,370 | 04/25/1995 | Janssen | |
| | 1K | 5,490,009 | 02/06/1996 | Venkateswar et al. | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | PUBLICATION DATE | NAME OF PATENTEE OR APPLICANT | Pages/Columns/Lines Where Relevant Passages/Figures Appear | Check if Translation attached |
|--|----|-----------------|------------------|-------------------------------|--|-------------------------------|
| | 1L | EP 1 001 306 | 05/17/2000 | Olympus Optical | | X |
| | 1M | JP 60-132476 | 07/15/1985 | Canon, Inc. | | X |
| | 1N | JP 63-292880 | 11/30/1988 | Kawasaki | | X |
| | 1O | JP 64-47180 | 02/21/1989 | Kawasaki | | X |
| | 1P | JP 2-216187 | 08/29/1990 | Seiko Epson | | X |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|--|----|--|
| | 1Q | A. Yasuda et al., "FLC Wobbling for High-Resolution Projectors", Journal of the SID 5/3, 1997, pp. 299-305. |
| | 1R | D. Chen, "Display Resolution Enhancement With Optical Scanners", Applied Optics, Vol. 40, No. 5, Feb. 10, 2001, pp. 636-643. |
| | 1S | T. Tokita et al., "P-108: FLC Resolution-Enhancing Device for Projection Displays", SID 02 Digest, 2002, pp. 638-641. |

EXAMINER

DATE CONSIDERED

| | | | |
|---|------------------------------|-----------------|------------------|
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|---------------------|----|--------------------|---------------------|-----------------|--|
| | 2A | 5,689,283 | 11/18/1997 | Shirochi | |
| | 2B | 5,691,785 | 11/25/1997 | Usui et al. | |
| | 2C | 5,842,762 | 12/01/1998 | Clarke | |
| | 2D | 5,897,191 | 04/27/1999 | Clarke | |
| | 2E | 5,978,518 | 11/02/1999 | Oliyide et al. | |
| | 2F | 6,025,951 | 02/15/2000 | Swart et al. | |
| | 2G | 6,104,375 | 08/15/2000 | Lam | |
| | 2H | 6,113,239 | 09/05/2000 | Sampsell et al. | |
| | 2I | 6,141,039 | 10/31/2000 | Poetsch | |
| | 2J | 6,174,060 | 01/16/2001 | Imaoka et al. | |
| | 2K | 6,184,969 | 02/06/2001 | Ferguson | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | PUBLICATION DATE | NAME OF PATENTEE OR APPLICANT | Pages/Columns/Lines Where Relevant Passages/Figures Appear | Check if Translation attached |
|--|----|--------------------|---------------------|----------------------------------|---|-------------------------------------|
| | 2L | JP 2-250081 | 10/05/1990 | Sony Corp. | | |
| | 2M | | | | | |
| | 2N | | | | | |
| | 2O | | | | | |
| | 2P | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|--|----|--|
| | 2Q | Webpage "Profile: Emerging Technology" (www.newscenter.philips.com), 2002. |
| | 2R | Webpage "Four Philips LCOS Televisions" (www.bluefi.co.uk). |
| | 2S | Webpage "Projection Display Technology" (www.extremetech.com) |

EXAMINER

DATE CONSIDERED

FORM PTO-1449

LIST OF PATENTS AND PUBLICATIONS FOR
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| EXAMINER INITIAL | | DOCUMENT NUMBER | PUBLICATION DATE | NAME | Pages, Columns, Lines Where Relevant Passages or Figures Appear |
|---------------------|----|--------------------|---------------------|------------------|--|
| | 3A | 6,191,893 | 02/20/2001 | Bradley | |
| | 3B | 6,219,017 | 04/17/2001 | Shimada et al. | |
| | 3C | 6,239,783 | 05/29/2001 | Hill et al. | |
| | 3D | 6,247,816 | 06/19/2001 | Cipolla et al. | |
| | 3E | 6,309,071 | 10/30/2001 | Huang et al. | |
| | 3F | 6,309,073 | 10/30/2001 | Nakayama et al. | |
| | 3G | 6,313,888 | 11/06/2001 | Tabata | |
| | 3H | 6,384,816 | 05/07/2002 | Tabata | |
| | 3I | 6,393,145 | 05/21/2002 | Betrissey et al. | |
| | 3J | 6,398,364 | 06/04/2002 | Bryars | |
| | 3K | 6,481,852 | 11/19/2002 | Osaka | |

FOREIGN PATENT DOCUMENTS

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| | 3L | | | | | |
| | 3M | | | | | |
| | 3N | | | | | |
| | 3O | | | | | |
| | 3P | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|--|----|--|
| | 3Q | D. Dewald et al. "Sequential Color Recapture and Dynamic Filtering: A Method of Scrolling Color", SID 00 Digest, pp. 1-4. |
| | 3R | |
| | 3S | |

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|---------------------|----|--------------------|---------------------|--------------------|--|
| | 4A | 6,467,910 | 10/22/2002 | Sato | |
| | 4B | 6,507,326 | 01/14/2003 | Manabe et al. | |
| | 4C | 6,532,044 | 03/11/2003 | Conner et al. | |
| | 4D | Re. 36,725 | 06/06/2000 | Sonehara et al. | |
| | 4E | 2002/0033992 | 03/21/2002 | Den Bossche et al. | |
| | 4F | 2002/0171809 | 11/21/2002 | Kurtz et al. | |
| | 4G | | | | |
| | 4H | | | | |
| | 4I | | | | |
| | 4J | | | | |
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